

Sixteenth Report

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~~MONTANA LEGISLATIVE
COUNCIL~~

OFFICE OF THE STATE FORESTER

To

Honorable J. Hugo Aronson

Governor

State of Montana



GARETH C. MOON

State Forester

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Sixteenth Report
1957-1958
**OFFICE OF
THE STATE FORESTER**

To
Honorable J. Hugo Aronson
Governor
State of Montana



GARETH C. MOON
State Forester

Letter of Transmittal

September 2, 1958
E. Wing Jumbo Hall
Montana State University
Missoula, Montana

Honorable J. Hugo Aronson
Governor, State of Montana
Helena, Montana

Dear Governor Aronson:

In accordance with the statutes of the State of Montana, there is transmitted herewith to you the Report of the Office of State Forester covering the fiscal years ending June 30, 1957, and June 30, 1958.

Respectfully submitted,
GARETH C. MOON,
State Forester

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Members of The Board of Land Commissioners

GOVERNOR J. HUGO ARONSON.....	Chairman
HARRIET MILLER	Supt. of Public Instruction
FORREST H. ANDERSON.....	Attorney General
FRANK MURRAY	Secretary of State
LOU E. BRETZKE	Secretary and Commissioner of State Lands and Investments

Members of The State Board of Forestry

GOVERNOR J. HUGO ARONSON.....	Chairman, Helena
D. P. FABRICK.....	Chouteau
CHARLES L. TEBBE.....	Missoula
GEORGE NEFF	Bonner
MARK SCHOKNECHT	Libby
SYLVAN J. PAULY.....	Deer Lodge
ROSS WILLIAMS	Missoula
HOLLIS YOUNG	Creston

(P. D. Hanson, Missoula, and Hanley Morris, Superior, served as members until their resignations were accepted, due to leaving the State.)

Montana Rural Fire Fighters Service

Executive Committee

1956

N. E. BEERS, Chairman	Director, Montana Extension Service
NICHOLAS WELTER, Vice Chairman	U. S. Bureau of Indian Affairs
GARETH C. MOON, Secretary	State Forester
A. E. SPAULDING	U. S. Forest Service
GEORGE NEFF	Anaconda Company
E. A. ERICKSON	Montana Asociation of Farm Mutual Insurance Companies
HORACE E. JONES	Bureau of Land Management
HOWARD ALLEY	Implement Dealer
JOHN BUTTLEMAN	President, Soil Conservation Districts
PAUL WORKING	Merchant
CARTER V. RUBOTTOM, State Coordinator	Montana Rural Fire Fighters Service

1957

HORACE E. JONES, Chairman	Bureau of Land Management
NICHOLAS WELTER, Vice Chairman	U. S. Bureau of Indian Affairs
GARETH C. MOON	State Forester
ROBERT RASMAUSSON	Extension Service
GEORGE NEFF	Anaconda Company
E. A. ERICKSON	Montana Association of Farm Mutual Insurance Companies
A. E. SPAULDING	U. S. Forest Service
FRED TUBBS	Farm Bureau and Belgrade Fire District
PAUL WORKING	Merchant and Realtor
EDWARD WARWICK	Assistant Fire Chief and Deputy Sheriff, Yellowstone County
CARTER V. RUBOTTOM, State Coordinator	Montana Rural Fire Fighters Service

In Recognition . . .



J. C. HAMILTON, Chief Scaler

We in the Office of State Forester are fortunate to have an old timer with us who likes to take hold and get things done—one who can do them without getting into others' hair. Jack Hamilton is a good scaler—an artist. He knows it, we know it, and all who have had the pleasure of watching Jack work, know it. Jack has been with the State Forestry Department over 17 years.

Roster of Annual Employees

Gareth C. Moon, State Forester

Don M. Drummond, Deputy State Forester

Otha O. Isaacs, Assistant State Forester—Operations

DIVISION CHIEFS

Robert W. Arnold, Timber Management

Rodney O. Krout, Fire Protection

William K. Gibson,
Cooperative Forest Management

Carter V. Rubottom, Coordinator,
Montana Rural Fire Fighters Service

Herman Schultz, Hazard Reduction

DISTRICT STATE FORESTERS

Maurice Cusick, Stillwater State Forest

Kenneth Nichols, Missoula

Robert J. Lueck, Eastern Montana

Harry T. Vars, Kalispell

Virgil Weaver, Swan

TIMBER MANAGEMENT DIVISION

Elsie Clark, Clerk-stenographer

Richard Isaacs, Consolidation Forester

Joe Cone, Timber Sales

Robert B. Griffes, Chief, Forest Inventory

Sherman Finch, Timber Sales Supervisor

William F. Gunterman,

Jack Hamilton, Chief Scaler

Special Uses—Range Management

Carl Sagmuller, Forest Inventory

FIRE PROTECTION

Martin Onishuk, Fire Prevention Forester

Richard Sandman,

Assistant District State Forester (Stillwater)

Carl Toycen, Fire Warden (Swan)

HAZARD REDUCTION

Carl J. Managhan, Foreman

Serena Lee, Clerk-stenographer

Ruth Guinard, Clerk-typist

SERVICE FORESTERS

Alfred Laber, Missoula

Earl Salmonson, Kalispell

Robert Symes, Bozeman

(Alfred Laber was replaced by Oliver Lee, Missoula, August, 1958—
Harry T. Vars half time—Earl Salmonson half time.)

SPECIAL SERVICES

Lloyd Messner, Mechanic

Edgar McCulloch, Heavy Machines Operator

OFFICE STAFF

Nita Beckwith, Cashier

Amarylis Kahler, Clerk-stenographer

Barbara Hansen, Clerk-stenographer

Shirley Vohs, Clerk-stenographer

(Mrs. Kahler replaced by Helen Lucier, July, 1958)

SEASONAL FOREMEN

Carl Hendrickson

Floyd W. Pierce

Royden A. Hollopeter

Marvin C. Willis

Floyd W. Holman

Boyce J. Robbins

Alber Lewis

Francis M. Shenefelt

William M. Wilhelm

William A. Stefanon

Harold E. Mullin

Tracy C. Williamson

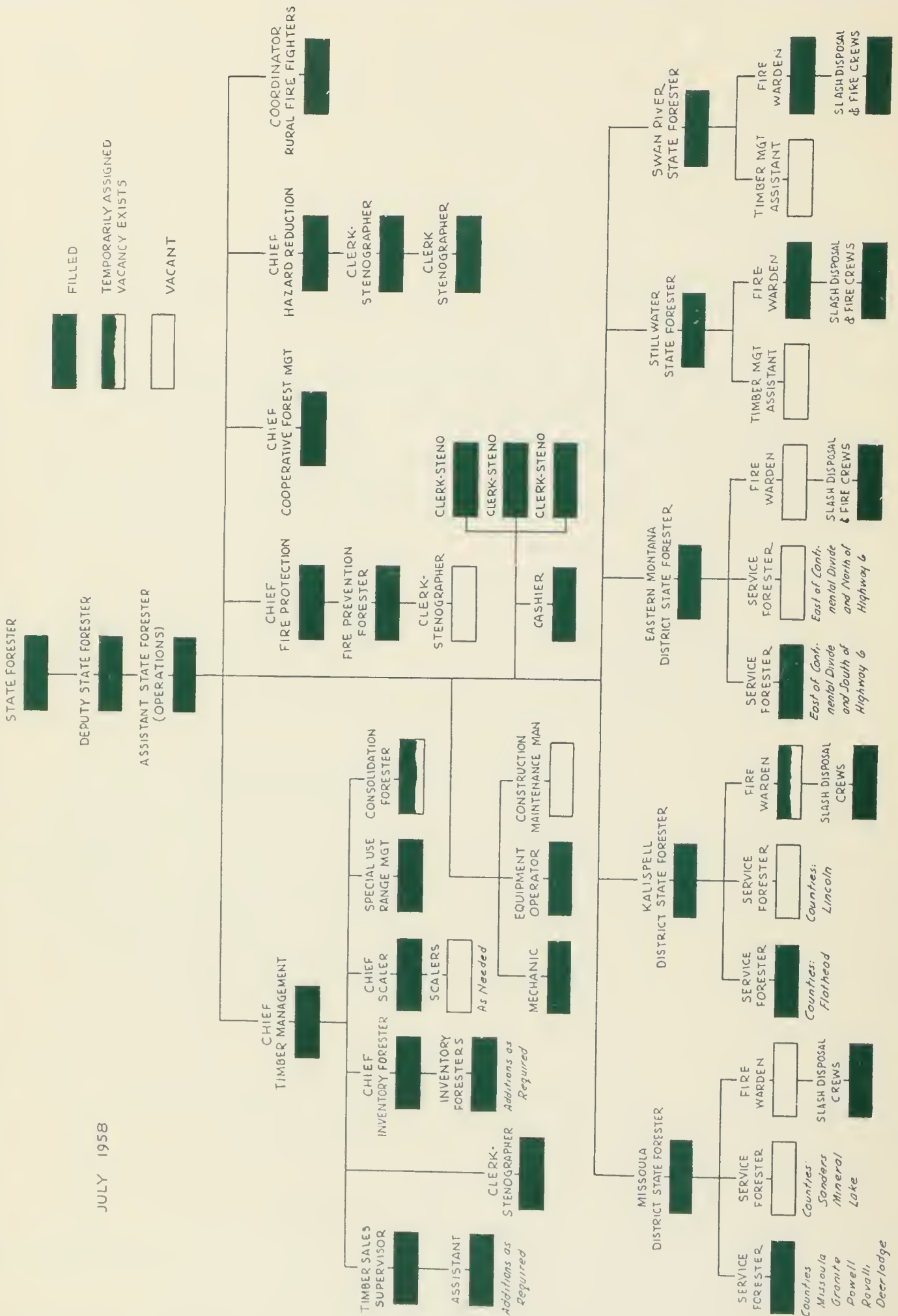
COOKS

Olive B. Shenefelt

Betty Toyce

ORGANIZATION CHART - OFFICE OF MONTANA STATE FORESTER

JULY 1958



GENERAL INFORMATION

Office of State Forester

Under the Enabling Act approved by Congress on February 22, 1889, Sections 16 and 36 in every township within the State was granted to the State of Montana for common school support. If any of these sections had been disposed prior to the enactment of this legislation, lieu sections were granted to the state. The State Legislature set up the facilities for the management of these lands.

The Constitution of the State of Montana provides that the direct control of all lands granted to the State for the support of the various educational institutions will be under the direction of the State Board of Land Commissioners which is comprised of the Governor, Superintendent of Public Instruction, Secretary of State, and the Attorney General. Because of the volume of business and the technical nature of the work, the Legislature saw fit to establish the Office of the State Forester, just forty-nine years ago.

The State Forester is the Chief Administrative and executive officer, under the State Board of Land Commissioners, in all matters pertaining to the State Forests. He is appointed by the Governor and confirmed by the State Senate. The State Forester is authorized by law to appoint such help as district foresters, fire wardens, scalers and other trained and qualified assistants as may be necessary in the administration of the State Forests and the forest lands within the State. The State Forester does all the field work in the selection, location, examination, appraisal and reappraisal of the state timber lands. It is the duty of the State Forester to supervise all state timber sales. He is in charge of all fire wardens of the State and he must direct and aid them in their duties. In general, the State Forester, under the supervision of the Land Board, executes all matters pertaining to forestry within the jurisdiction of the State.



A Stand of Ponderosa Pine on Capitol Building Land in Lincoln County.

In accordance with the provisions of the Enabling Act, necessary laws have been enacted by the State Legislature to guide the administration of the Land Department and the Office of State Forester. Provisions have been made for the annual distribution of income received from the rental and operation of the grant lands. The net rental income from the Public School grant lands, such as grazing, together with the interest earned on investments, after statutory deduction, is distributed annually to the counties of the State on the basis of the number of children of school age. Income from other grant lands is made available to the institutions to assist in defraying operational expenses. All monies received from the sale of lands, timber, and minerals, is credited to a permanent fund for each of the land grant institutions. These permanent funds are held forever inviolate as the property of the fund.

The monies are invested in United States Government Bonds, Bonds of the State of Montana, counties, cities and school districts within the state, and the interest received on these investments is distributed annually with the other income to the proper land grant institutions. The Capital Building Grant is predominately forest land. All money received from the sale of this land, interest, grazing rentals, agriculture, sale of timber, and oil royalties, are disbursed as received for improvements and new construction of capitol buildings.

All state owned lands, or those which may hereafter be acquired by the State, which are principally valued for the timber on them, for the growing of the timber, for watershed protection, are under statute classified and designated as "State Forests" and reserved for forest production and watershed protection. The following state forest units have been established primarily to secure, through forestry management, a continuous supply of timber and a permanance of watershed cover:

1. Stillwater State Forest, approximately 90,000 acres in the watershed of the Stillwater and Whitefish Rivers in Flathead and Lincoln Counties.
2. Swan River State Forest, approximately 38,000 acres in the Swan River watershed of Lake County.
3. Coal Creek State Forest, approximately 20,000 acres in the Coal Creek watershed of the North Fork of the Flathead River, Flathead County.
4. The Sula State Forest, approximately 10,000 acres in the watershed of Camp and Cameron Creek of Ross Hole in Ravalli County.
5. Thompson River State Forest, approximately 15,000 acres in the Thompson River watershed of Sanders County.
6. Clearwater State Forest, approximately 18,000 acres in the Clearwater River watershed of Missoula County.
7. The Lincoln State Forest, approximately 8,000 acres in the Blackfoot River watershed in Lewis and Clark County.

Lands classified as timber lands are not subject to sale although the timber may be sold and disposed of in accordance with law. Although the State Forester, with approval of the State Board of Land Commissioners, sells timber at such a price per thousand feet as in his judgment shall be for the best interest of the State, no timber shall be sold at a price of less than three (\$3.00) dollars per thousand feet for White and Yellow Pine and Spruce, or \$1.50 per thousand feet for all other species. Timber is sold and cut under rules and regulations prescribed by the State Board of Land Commissioners for the preservation of standing timber and prevention of fires. In order to enable Montana's forest lands to continue the production of wealth in the form of growing crops of forest products, abundant usable water, and matchless outdoor recreation areas, the Office of State Forester has begun, and is continuing, a forestry program of long range policies based on factual and scientific information.

In 1939 the State Legislature created the Montana State Board of Forestry in its present form for the purpose of protection and conservation of forestry resources, forest range and water, prevention of forest fires and soil erosion and for more adequately promoting and facilitating the cooperation between the State of Montana and all of the public and private agencies associated in such work in the state. The responsibilities of the State Board of Forestry lie largely with the forest activities on privately owned forest lands. The Boards consists of the Governor, as ex-officio chairman, and seven additional members who are appointed by the Governor. These members are appointed to represent:

Water Conservation Board
Forest Protection Associations
Stock and Wool Growers Associations
Lumber Manufacturers Association
The Grange, The Farm Bureau and Farmers Union
Farmers Union
Montana School of Forestry
U. S. Forest Service

The State Forester serves as Secretary to this Board.

The State Board of Forestry is authorized and empowered to classify the forest land areas of the State as forest lands for which conservation and fire protection measures are required; to create fire districts; to provide for the protection of forest lands by the State Forester or by any other feasible means; to make and enforce reasonable rules and regulations for the purpose of enforcing and accomplishing their objectives; to cooperate with the State and Federal agencies; to give technical and practical advice to the farmers concerning water and forest conservation and in the establishment and maintenance of woodlots, windbreaks and shelterbelts; to assist the State Board of Land Commissioners in the protection, economical development and use of the State forests. The State Board of Forestry is required by law to hold two regular meetings each year at times and places designated by it. During the past biennium, in addition to the regular duties of the board such as approving fire assessment lists, the board studied, developed and recommended several changes in forestry legislation, which were presented to the 35th Legislative Session. The Board further studied in detail the forest insect infestations and took action to delay control activities on the spruce budworm problem until experimental control work conducted by the U. S. Forest Service in relation to the spider mite situation was completed. The Board passed and put into effect the "Shovle, Bucket and Axe" regulation, authorized the State Forester to participate in the Soil Bank program, and studied the possibility of using prison labor in emergency fire control situations. To enable state wide enforcement of the fire laws the Board, through resolution classified all forest lands in the State of Montana as forest lands for which conservation and fire protection measures are reasonably required. The Board resolved that it was the duty of the State Forester to represent the State in each and any association protecting state forest lands and to accept the assignment and action as a director if requested by the association. The

Board further resolved that the Laws of Montana relating to fireworks be clarified and recommended the use and sale of fireworks to be prohibited in Montana.

In order to determine the proper balance of Federal-State-Private responsibilities in forest fire protection, the Department of Agriculture employed the Battelle Memorial Institute to conduct a study. Representatives of the Institute met with the Montana State Board of Forestry as a part of a nation-wide series of meetings to determine local aspects in order to draw up recommendations for the nation as a whole.

In September, 1956 the State Board of Forestry passed the following motion: "The State Board of Forestry has reviewed the operation and accomplishments of the State Forestry Department in the past biennium and commends the organization in respect to its efficiency, work and plans for the future, and believes the State Forestry program merits adequate financial support."

Three major forestry problems face the State of Montana:

- (1) Control of forest insects and diseases.
- (2) Statewide forest fire protection.
- (3) Reduction and management of fire hazards incurred during logging and clearing operations.

As these problems are detailed and carry many serious ramifications, attempts to secure adequate legislation to improve the situations have, in the past, failed. Governor J. Hugo Aronson took action to appoint three standing committees made up of Board members to assist the State Forester in studying these problems and to recommend suitable legislative proposals. The committees have held numerous meetings and have developed a legislative program, approved by the State Board of Forestry which will be presented to the 36th Session of the Montana Legislature for consideration.

OFFICE OF STATE FORESTER
STATEMENT OF APPROPRIATIONS AND EXPENDITURES
OF THE MONTANA STATE BOARD OF FORESTRY

	Balance Forward	Appropriation	Disbursed	Forward	Revert to Gen. Fund
Fiscal Year 1957, July 1, 1956—June 30, 1957					
Forestry Board					
Salaries	\$.....	\$ 1,080.00	\$ 1,080.00	\$.....	\$.....
Travel	192.30	420.00	612.30	.....	.....
Fiscal Year 1958, July 1, 1957—June 30, 1958					
Forestry Board					
Salaries .....	.....	1,080.00	1,080.00	.....	.....
Maintenance and Operation.....	.....	395.00	279.70	115.30	.....
Social Security .....	.....	25.00	25.00	.....	.....

STATE FORESTER'S OFFICE

Location

The central office of the State Forester was moved in April, 1958, from the Forestry School Building to the North Wing of Jumbo Hall, a temporary frame structure on the campus of Montana State University. The headquarters of the Divisions of Forest Fire Protection, Timber Management, Cooperative Forest Management, the Forestry Inventory and the Office of the Missoula District Forester and staff are headquarters in this building as well as the central office clerical force. The Division of Hazard Reduction (Brush and Slash Disposal) operates from the recently completed office building in Kalispell which also houses the offices of the Assistant Chief of Timber Management, the Kalispell District Foresters, and the Service Forester for Lake, Lincoln and Flathead Counties. The Coordinator for the Montana Rural Fire Fighters Service, the Eastern Montana District Forester and Service Forester are located in Bozeman. Headquarters for the Stillwater District Forester is near Olney and the Swan River District Forester at Goat Creek, 13 miles south of Swan Lake.

Office Force

The State Forester's clerical staff consists of a cashier, responsible for financial and inventory records, three clerk-stenographers and a stenographer-typist. One of the clerk-stenographers will also act as central radio operator and receptionist when the new radio communications system is completed. The Hazard Reduction Division of the Kalispell office employs a chief clerk and a stenographer-typist.

Organization

The Office of State Forester has been re-organized to group various functions into divisions so that the work in any one division is the responsibility of one individual. The divisions are:

1. OPERATION, headed by the Assistant State Forester whose responsibilities include fiscal procedures and records, personnel management and general field and office management;
2. FIRE PROTECTION, headed by a Chief whose responsibilities include activities related to forest fire problems as they apply to State owned and privately owned forest lands;

3. **TIMBER MANAGEMENT**, headed by a Chief who is responsible for the Timber Management problems on the State owned forest lands;
4. **HAZARD REDUCTION**, headed by a Chief whose responsibility is to control the slash disposal problems on State and privately owned lands;
5. **COOPERATIVE FOREST MANAGEMENT**, headed by a Chief who is responsible for the cooperative programs of technical assistance to the small forest landowner;
6. **MONTANA RURAL FIRE FIGHTERS SERVICE**, headed by a Coordinator whose responsibility is to coordinate and improve through educational programs the existing rural fire departments; and
7. **FOREST LAND INVENTORY**, headed by a Chief who is responsible for the inventory program on State and privately owned lands.

The Deputy State Forester has the responsibility of assisting the State Forester in planning, organizing, directing, revising and coordinating the activities of the department and acting in place of the State Forester in his absence.

In order to more efficiently carry out the forestry work, the State has been divided into five districts with a District State Forester in charge of each district. Headquarters for the districts are located in Missoula, Kalispell, Bozeman, Stillwater and Swan River State Forests.

As of June 30, 1958, the Office of State Forester consisted of thirty-six (36) permanent employees—twenty-nine (29) men and seven (7) women. Of the men sixteen (16) have degrees in forestry management from a recognized school of Forestry. In addition seasonal employees are hired as required to combat fires, hazard reduction or perform other related jobs.

Accomplishments

Consolidating the headquarter's numerous activities of the Office of State Forester in one headquarters building in Missoula with suf-

ficient room has resulted in more efficient and economical administration.

A coded filing system has been established and methods of filing land records and inventory cards have been improved. A more efficient procedure for requisitioning supplies and equipment has been developed. A system of weekly work reports has been put into operation, and antiquated equipment has been replaced with modern efficient machines.

Problems

The problems of inter-departmental communication is being solved by a new intercom system, routing method, scheduled staff meetings, and an improved radio communications system.

A most difficult problem arises from the processing of requisitions and claims. If all appropriated funds were consolidated into one disbursement fund, at least 19 separate fund accounts could be eliminated resulting in savings of time, supplies, labor and, consequently, tax dollars. Budget request could be made in the usual manner through proper accounting.

The State Forestry Department, unable to meet the salaries and job benefits of private employment has lost twelve foresters in the last two years to these agencies. This turnover in personnel will continue to hinder all activities of the department. It requires constant and additional on-the-ground training. Loss in some activities cannot be gained even after training has been completed.

Recommendations

1. To consolidate all appropriated monies into one disbursement fund.
2. To continue to improve and expand the radio and intercom system.
3. Minimize personnel turnover and training by increasing the pay scale of the professional foresters to that of private and federal agencies.
4. The present administration office of State Forester is a temporary structure. Funds should be allocated to the State Forester to provide for a more permanent office.

OFFICE OF STATE FORESTER
STATEMENT OF APPROPRIATIONS AND EXPENDITURES

	Balance Forward	Appropriation	Disbursed	Forward	Revert to Gen. Fund
Fiscal Year 1957, July 1, 1956—June 30, 1957					
Administration					
Salaries	\$.47	\$26,765.00	\$26,765.47	\$.....	\$.....
Maintenance	3.42	2,382.00	2,385.42	.....	.....
PERS			4,767.34	.....	.....
Capital Outlay	87.13	1,950.00	2,037.13	.....	.....
Repairs and Replacements.....	29.16	150.00	179.16	.....	.....
Protection of Lands					
Insect Control	8,322.32		2,260.23	.....	6,062.09
Salaries and Wages.....	.40	20,215.00	20,215.40	.....	.....
Capital Outlay	437.37	2,880.00	3,317.37	.....	.....
Repairs and Replacements.....	849.78	2,500.00	3,349.78	.....	.....
Timber Sales					
Salaries	1.06	72,650.00	72,651.06	.....	.....
Capital Outlay	682.33	1,178.00	1,860.33	.....	.....
Maintenance and Operation.....	2.50	16,013.00	16,015.50	.....	.....
Fiscal Year 1958, July 1, 1957—June 30, 1958					
Administration					
Salaries		58,680.00	58,680.00	.....	.....
Maintenance and Operation.....		23,000.00	22,687.64	312.36	.....
Capital Outlay		1,900.00		1,900.00	.....
Repairs and Replacements.....		200.00	157.14	42.86	.....
PERS		4,965.00	4,965.00	.....	.....
Social Security		1,500.00	1,500.00	.....	.....
Protection of Lands					
Salaries		15,110.00	15,110.00	.....	.....
Maintenance and Operations.....		28,087.00	26,376.55	1,710.45	.....
Social Security		400.00	400.00	.....	.....
Insect Control		75,000.00	4,111.00	70,889.00	.....
Capital Outlay		2,500.00	2,500.00	.....	.....
Repairs and Maintenance.....		1,150.00	1,109.71	40.29	.....
Timber Sales					
Salaries		43,780.00	43,780.00	.....	.....
Maintenance and Operation.....		1,828.00	1,810.87	17.13	.....
Social Security		1,000.00	1,000.00	.....	.....
Capital Outlay		900.00	89.46	810.54	.....

STATE FOREST LAND PROGRAMS



Christmas Trees are sold by the Bale. Christmas Tree Sales from State Forests brought the State \$26,000 in 1958.

TIMBER MANAGEMENT



It Takes Big Equipment to Handle Modern Logging Jobs.

The Timber Management Division is primarily responsible for realizing maximum revenues from the sale of forest products consistent with sound forestry and land management practices. The activities fall into two broad categories: (1) timber sales, and (2) other forest land management.

TIMBER SALES PROGRAM

Program

As recommended by the Forest Advisory Commission, the State Board of Forestry and the State Board of Land Commissioners, timber sales have been made primary to control epidemic outbreaks of tree killing insects and to salvage the timber killed. Sales of over-mature timber has continued in areas which do not interfere with the control and salvage in the insect problem area. Only such timber is sold as can be properly managed by trained forestry personnel. It is apparent that a proper timber cutting policy cannot be established until reliable information is obtained concerning the amount

and condition of the state owned forest resources. When this inventory is completed, the annual allowable cut of merchantable timber should represent the basis for legislative appropriations to cover the State Forester's financial budget for timber sales and forest management.

Accomplishment

During the biennium the Timber Management section, assisted by District State Foresters, administered sales approximating 50 million board feet in 127 sales and permits. While this figure represents a reduction in the annual cut from previous years, it is based on a more realistic appraisal of the State timber resources and the appropriations granted for management purposes.

The State Forester's policy is to decentralize sale authority so that more of the Timber Sale Program can be adequately handled at a local or district level. In order to partially accomplish this an operational Timber Sale Manual has been prepared to guide the State Forestry De-

partment personnel in the preparation of timber sales. Sales larger than 100 thousand board feet will continue to be prepared by the Timber Management Division until the district forest personnel are better trained and more equitably financed. District State Foresters at the present time handle posts, poles, fire wood permits and Christmas tree sales.

The State Forester has been granted the authority by the State Board of Land Commissioners to hold sales of less than 100 thousand board feet on a ten-day invitational bid system. This provides a feasible and immediate means of locating small stands of salvagable timber that in most cases can be more economically harvested by the small operator. This act provides income from some areas that would otherwise had been lost to the State. In addition it provides a way of combating some areas of disease and insect infestation which could expand to an epidemic if not contained while small. Several of these sales have been completed.

In 1955 the Board of Land Commissioners authorized the State Forester to collect an amount equal to 75c for each 1,000 board feet of timber cut on State Forest lands to be reinvested in the lands as a timber stand improvement measure. On the better forest sites on some sales areas in Lake, Flathead and Missoula Counties, the soil has been scarified to encourage natural reseeding. The removal of undesirable species, burning and hand seeding has been accomplished on one sale in Flathead County. 15,000 Ponderosa Pine seedlings were hand planted on the Sula State Forest in Ravalli County and 20,000 Ponderosa Pine seedlings on the Swan River State Forest in Lake County. Financial assistance in tree planting under the Soil Bank Act is being investigated. The preparation of a Stand Improvement Manual has been started.

Christmas tree sales had been streamlined and a more efficient account method introduced. These sales are handled much in the same manner as the sale of posts and poles, however, the permits are issued from the central office since many sales are to large companies who may be purchasing the trees from scattered areas covering several forest districts.

Studies continued during the past two years have contributed to a more effective appraisal

system, stand improvement program, improved road and bridge standards, reduction of wastes and more efficient forest protection.

Problems

Forest industries have especially felt the effects of the recent recession in lumber and wood product sales. The slump in the lumber market has been detrimental to State timber sales generally. No bids were received for approximately three million board feet offered for sale. Over one-third of the purchasers requested time extensions for various reasons. Failure to extend time limitations could have caused these operators financial difficulties which would have contributed to a further decline in local industry. Time extensions on sales already in effect have delayed some new sales since there was no supervisory personnel available. This coupled with a heavy turnover in trained personnel due to the inability of the State Forestry Department to meet Private and Federal agency pay schedules and because of a reduction in appropriations has had a bearing on the reduced amount of timber offered for sale in the past two years.

An adequate road system is necessary for timber sales and forest protection. Although some headway is being made in providing new roads during timber sale operation, much remains to be done before an adequate road system is installed on the state forests.

The scattered distribution of most state forest lands makes investigation, preparation and administration of timber sales unnecessarily expensive. Some lands are so remote and are so limited in size that logging cost cannot be justified.

Recommendations

1. To continue the present cutting budget by limiting sales to 20-25 million board feet annually until the inventory of State forest land is completed and a budgeted annual cut has been calculated.

2. To institute a lands consolidation program which will lower management and administrative costs.



Improved Road and Bridge Standards on State Timber Sales Will Reduce Future
Costs of Forest Management and Protection.



SPECIAL USES OF STATE FOREST LANDS

Program

The State Forester is responsible for administering private and commercial development of State forest lands with the exception of mineral deposits. Applications for special use usually fall into one of two classes; recreational or commercial.

Recreational use includes such items as cabin sites, shooting ranges, boating facilities and religious retreats. Rights-of-way, grazing permits, dude ranches and mill sites are examples of commercial developments.

Accomplishments

The demand for special use of State Forest lands has shown a constant increase. Since 1956, the number of dwelling permits has increased from 176 to 278. Following this trend, 98 new summer home lots have been surveyed on eight new areas this biennium. When new home sites are planned, provisions for public camping and access facilities are integrated.

Both summer homes and permanent dwellings are being inspected for compliance with the Land Board ruling to establish better standards of construction and maintenance. The boundaries of 75 old homesites have been resurveyed and mapped for accurate record.

Of the various special uses of State Forest lands, grazing is most common. Grazing permits have increased from 293 in 1956 to 328 in

1958. A reduction of acreage under lease is largely due to the release of a large area formerly under permit to the Montana Fish and Game Commission.

In accordance with State law, the survey of State forest lands to determine grazing capacity is being continued.

The survey of 60 units completed in 1956 has reduced grazing permit income but has established more realistic livestock capacities. These investigations indicate a carrying capacity of 15 acres per animal unit month or 75 acres per cow and calf during a five month season. It is expected that 60 additional units approximating 40,000 acres will be surveyed during the 1958 season to determine carrying capacity.

The Office of State Forester is cooperating with the U. S. Forest Service, the Anaconda Company, Northern Pacific Railway Company, U. S. Indian Service, and the State Fish and Game Department in an effort to improve utilization, administration, and to minimize trespass. Cooperative agreements presently involve 37,115 acres and 36 cattlemen. Three cases of grazing trespass have been investigated and placed under permit during the fiscal year ending June 30, 1958.



Grazing Fees from State Forest Lands Produced \$11,000 in Revenue During 1958.
Total Special Use Income from State Forests in 1958 was \$17,842.

GRAZING

Year	No.	Acres	Income	Range Capacity		Survey Progress	
				Complete		Incomplete	
				Units	Acres	Units	Acres
1958	328	186,000	\$10,859.18	60	40,915	268	145,867

OTHER USES

Year	No.	Permits For Summer Homes		Permanent Residences		Permits For Other Uses		Home Site Development
		No.	Income	No.	Income	No.	Income	Completed
1958	278		\$3,822.50	92	\$1,055.00	49	\$2,105.75	20

Total Income from special use of state forest lands: 1956, \$15,424.05;
1958, \$17,842.43.

Problems

The ownership pattern of State forest lands makes proper range management extremely difficult. Areas of excessive grazing and abuse occur where unfenced State lands are adjacent to private stock raising operations. Continued overgrazing of palatable plants eventually results in the death or mutilation of forest reproduction preventing regeneration of valuable timber. On natural forest sites, reduction of tree species usually encourages field of nine-bark, snowberry, pine grass and other unpalatable plants making the land of little value for stock raising or timber production. On some State lands, grazing fees do not compensate for timber lost as a result of destructive grazing. The increase in number of right-of-ways on State forest land has taken considerable time away from special uses. The planning, development and administration of a comprehensive special use program for State forest lands is being hampered by insufficient personnel. Since this area of the State forest resource is largely undeveloped, additional assistance would bring greatly increased revenues into the school fund.

The public's use of State, Federal and Private forest lands for recreation purposes is accelerating at a tremendous speed. New problems of

administration and protection are constantly facing the State Forestry Department. Since recreation problems are becoming such an important factor in overall management plans, the State Forester has prepared a plan for providing recreation areas in the form of camp and picnic grounds within the state forests. The primary purpose of these facilities is to control the location of camp fires to safe areas. With the development of new or improved roads to the Swan and Stillwater State Forest (largest blocked state holdings), the vacationing public now has easy access to these areas. Consequently, the plan to provide these minimum improvements to these forests:

Recommendations

1. To provide sufficient funds to fully develop the state forest special use program to increase the revenue into the school fund.
2. To provide funds for purchasing fence in order to protect certain state lands from destructive grazing.
3. To continue the program of camp and picnic ground development and improvement.

IMPROVEMENTS NEEDED TO COMPLETE EXISTING CAMP GROUNDS

SWAN STATE FOREST

Camp	SIGNS												
	Tables	Benches	Toilets	Garbage Pit	Fire Places	Entrance	Facility Provided By	Men	Women	Garbage	Picnic Area	Trailer Park	Name, Direction and Distance
Goat Cr. Camp (Station)	6	12	5	4	11	1	2	3	3	4	2	1	0
Swan River Camp (Bridge)	5	10	3	2	8	1	1	2	2	2	1	1	1
Point Pleasant	2	4	1	1	6	1	1	1	1	2	1	1	4
Woodward Cr.	1	2	1	1	1	1	1	(Toilet)		2	1	1	3
Soup Creek Camp.....	0	0	0	1	0	1	1	1	1	1	0	0	2
Total	14	28	10	9	26	5	6	7	7	10	5	3	10

IMPROVEMENTS NEEDED TO INSTALL NEW CAMP GROUNDS

SWAN STATE FOREST

Loop Road Camp (NW¼ SW¼) S10 T23 R17	2	4	1	1	2	1	1	(Toilet)		1	1	0	2
Lost Cr. Camp (NE¼ NW¼) S4 T24 R17	4	8	2	2	2	1	1	1	1	2	1	0	3
Soup Creek Camp (New) S18 T24 R17	2	4	2	1	2	1	1	1	1	1	1	0	0
Total	8	16	5	4	6	3	3	2	2	4	3	0	5
Grand Total	22	44	15	13	32	8	9	9	9	14	8	3	15

IMPROVEMENTS NEEDED TO COMPLETE EXISTING CAMP GROUNDS STILLWATER STATE FOREST

Camp	SIGNS												Name, Direction and Distance
	Tables	Benches	Toilets	Garbage Pit	Fire Places	Entrance	Facility Provided By	Men	Women	Garbage	Picnic Area	Trailer Park	
Spring Creek Camp	8	32	4	4	8	1	2	2	2	4	2	0	0
Upper White Fish Lake	8	32	4	4	8	1	1	2	2	4	1	1	1
Swift Cr. (Road Crossing)	6	12	4	2	6	1	1	2	2	2	1	0	1
Total	22	76	12	10	20	3	4	6	6	10	4	1	2

IMPROVEMENTS NEEDED TO COMPLETE EXISTING CAMP GROUNDS STILLWATER STATE FOREST

Stillwater Station	4	16	2	1	4	1	1	1	1	1	1	1	0
Lower Stillwater Lake.....	4	16	2	1	4	1	1	1	1	1	1	1	2
Fitzsommonds Cr. Crossing.....	4	16	2	1	4	1	1	1	1	1	1	1	2
Total	12	43	6	3	12	3	3	3	3	3	3	3	4
Grand Total	34	124	18	12	32	6	7	9	9	13	7	4	6

July 25, 1958

FIRE PROTECTION ON STATE FOREST LANDS

Program

The State Forester is responsible for protecting state forest lands from fire. Fire protection of state owned forest lands is financed by legislative appropriation supplemented by federal assistance under the Clarke-McNary Act.

The peculiar distribution of state forest lands complicates fire control measures. State forest lands existing in blocked ownership are protected by employees and equipment of the State Foresters Office. The protection of small and scattered holdings is often assigned through a contractual arrangement to other protection agencies able to provide more economical protection.

Accomplishments

During the past four years there has been continuous improvement of the fire protection capabilities of the State Foresters Office with a general renovation and building program and the addition of fire suppression equipment.

Plans have been completed to improve detection by moving one lookout and replacing the wooden towers of two others with steel construction. The installation of radio communication in the Missoula headquarters coupled with the relocation of a radio tower in the Kalispell area will improve communication.

The fire protection and timber management divisions have begun to establish a comprehensive road network adapted to both protection and management functions. Improved road and bridge standards have facilitated the use of mechanized fire suppression equipment.

Several military surplus vehicles have been secured and modified for fire suppression work.

The State Forester in cooperation with the U. S. Forest Service administers the Cooperative Forest Fire Prevention Campaign (Smokey Bear Program) as a means of disseminating awareness of the menace of man-caused fires. The Keep Montana Green program is actively supported by the State Foresters Office.

The danger of man-caused fires is being reduced through the construction of new or im-



Two of These Steel Fire Lookout Towers, Declared Surplus by the U. S. Forest Service, Will be Moved to the Stillwater State Forest.

provement of old picnic and camping grounds with facilities for outdoor cooking in outdoor areas. The littering of state forest lands is also minimized by providing containers for trash disposal.

Problems

While an efficient communications system is vital to any effective forest fire suppression organization, it is especially essential to the State Foresters Office which protects widely scattered holdings. At present both mobile and stationary radio communications equipment is insufficient to provide efficient communication.

In an attempt to alleviate the critical shortage of fire fighting vehicles, the State Forester has repaired and converted to fire suppression

use military vehicles acquired through government surplus channels. While this action has resulted in some improvement of fire suppression capabilities, the use of these vehicles is limited by the need for modification, repair, frequency of breakdown and the scarcity of locally obtainable repair or replacement parts.

Additional building and personnel must be provided if maximum fire protection is to be provided. The construction of residences at Swan and Stillwater State Forest Headquarters would enable key personnel to reside at district headquarters during the fire season. In addition, seasonal fire dispatchers should be employed at each district headquarters during the summer months. Two bulldozers with transports and communication equipment should be obtained and stationed at Swan River State

Forest and Stillwater State Forest headquarters during the fire season.

Recommendations

1. Provide funds for the acquisition of modern standardized fire suppression vehicles and equipment.
2. Provide funds for improving the residence at the Stillwater State Forest headquarters, for the construction of an additional residence at Stillwater State Forest headquarters, and a new residence at the Swan River State Forest headquarters.
3. Provide for the employment of seasonal fire dispatchers where necessary.
4. Promote economy and efficiency of fire protection by consolidating scattered state owned lands.



An Army Surplus "Six by Six" Converted to a Fire Fighting Unit.

HAZARDS REDUCTION (State Owned Lands)

Program

Montana Statutes require the reduction of additional fire hazards created during logging on state owned lands. The reduction of these fire hazards through the treatment of logging debris is designated as brush disposal on state owned lands—slash disposal on privately owned lands. This differentiation facilitates explanation, discussion and accounting. The methods and principles involved are similar.

Policies governing the hazard reduction program on State lands are formulated by the State

Board of Land Commissioners on recommendation of the State Forester. The present policy requires purchasers of State owned timber to pay up to \$1.50 per each thousand board feet of timber harvested for brush disposal purposes.

Accomplishments

Approximately \$45,000 is deposited annually for hazard reduction work on State forest lands. This figure varies with the number and size of timber sales.



"Brush Blades" on Tractors Increase Efficiency of Unit in Hazard Reduction Work.

COLLECTIONS AND DISBURSALS OF FUNDS FOR THE DISPOSAL OF BRUSH ON STATE TIMBER SALE AREAS

	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
F. Y. 1957.....	\$51,537.79	\$44,620.83	\$96,158.62	\$74,442.37	\$21,716.25
F. Y. 1958.....	21,716.25	44,667.86	66,384.11	41,823.95	24,560.16

Due to several methods of hazard reduction, varying widths in firebreaks, cost per acre for fire break clean-up depending on type of logging, timber stands and topographic conditions,

the following accomplishments are determined by using the average cost of \$240.10 per mile for fire break construction for the average width of 50 feet:

	Fiscal Year 1957	Fiscal Year 1958
Wages for crews on State owned forest lands, including dozer rental.....	\$54,612.99	\$22,772.38
Miles fire break construction based on average cost per mile.....	227.50	94.75

Problems

Increases in wages, costs of equipment and administration have made the present brush disposal fee inadequate under adverse timber type and topographic conditions. Untreated slash has accumulated on areas where funds are insufficient to cover difficult disposal jobs. A flexible slash disposal fee would enable the

State Forester to fix assessments according to conditions on individual sales.

Recommendations

Establish a flexible disposal fee and authorize the State Forester to fix assessments according to the difficulty of slash disposal on the individual timber sales.

STATE FOREST INVENTORY

Program

The Timber Management Division three years ago started a complete appraisal of the State forest resource as a foundation for long-range management plans.

Accomplishments

Inventory of Swan River State Forest was completed in 1956. The data obtained indicates that an annual cutting budget of 15 million board feet for the next ten years will be sufficient to harvest the annual growth and to liquidate approximately 60 million board feet of overmature timber that probably would not survive the next ten year period. Permanent plots have been established to enable the State Forester to periodically bring the inventory up to date and to obtain other necessary information in the management of the forest. All information regarding the plots has been placed on IBM cards so that statistical information necessary may be speedily obtained.

It is expected that the field work on a similar survey in the Stillwater State Forest will be accomplished by the end of the 1958 field season and that tabulation of the data will be completed during 1959.

The necessary capital equipment to complete forest inventories has been purchased, con-

sequently, expenditures for this program will be largely for personnel travel and expendable equipment.

Upon completion of the Stillwater State Forest inventory, a total of 130,000 acres or 20% of the total State forest lands will have been inventoried. The remaining more or less scattered forest land must then be inventoried before improvement plans can be completed. Some of this will be done currently with the private land inventory.

Problems

The surveys now in progress have furnished information essential to the establishment of an annual cutting budget, however, the studies are too extensive to yield data which can be applied to other phases of timber management such as timber stand improvement.

Recommendations

The Legislature should continue to appropriate funds to enable completion of the State forest inventory. Most of the remaining 80% of the state lands to be inventoried can be accomplished during the inventory of private lands for taxation purposes. However, the state must pay its proportionate share to secure this information and to establish the necessary permanent plots.

SCALING

Program

Timber from State owned lands is scaled by State employed personnel. A chief scaler regularly inspects the work performed by scalers and determines that standards are kept up to those of other timber selling agencies and with private industry. The check scaler also has a continuing training program for scalers so that all personnel are adequately instructed with new methods and procedures.

Accomplishments

Scaling is being done more and more at central locations on trucks rather than on the timber sale area or at the purchaser's mill. By using a movable scaling platform, scalers are able to handle several sales at one station, and the volume of timber handled per scaler by this method is greatly increased. Scale record is recorded in triplicate allowing one copy to the purchaser at the time of delivery. This has received favorable comment by industry as it allows a record to be kept of log scale by loads, by operator and by days. This is an improvement over the previous system of reporting scale twice a month with no record kept of individual log loads.

Problems

Logging in Montana is generally seasonal and a problem is encountered in hiring competent scalers at the time of year needed, and at the salary scale now prevalent. Another problem is presented by small operators who do not remove sufficient volume to keep a scaler on duty full time. These small operators are required to deck logs until enough volume is accumulated to warrant scaling. Often times several small operators may require scaling at the same time the State Forester has insufficient personnel to do the job. In some areas loggers are required to sell logs by weight while the State is required by law to sell by the board foot Decimal C Log Scale Rule. The weight ratio to Decimal C Scale Rule is oftentimes inequitable and places a burden on the logger in that he takes a loss under this system.



Much of the Scaling is Done on the Truck. The Moveable Platform Makes Truck Scaling Easier and Safer.

Recommendations

1. It is recommended that the State Forestry Department produce a scaling manual which would incorporate the desirable features of those manuals used by other timber selling agencies.
2. It is recommended that the State Forestry Department investigate other methods of scaling such as weight to scale relationships, and a cubic foot volume measurement of truck loads or decks with a conversion factor to Scribner Decimal C Log Rule.
3. It is recommended that the pay scale for scalers, with overtime and holiday allowances, be similar to private industry and federal agencies selling timber.

CONSOLIDATION OF STATE FOREST LANDS

Program

The current situation of widely scattered State owned forest lands presents a very complex and unnecessarily expensive administrative problem. Similar to the report of the Forest Advisory Commission, most studies dealing with the State forest land management sooner or later recognize and recommend that the State take steps to consolidate its timber holdings. In general, recommendations tend to consider blocking the lands within the boundaries of the presently established State forests in the western portion of the state and designating new forests in the eastern portion.

The State Forester has initiated a program of investigation leading to consolidation.

Accomplishments

Certain steps are prerequisites to considering consolidation of State holdings. An unofficial opinion of the Attorney General states that adequate laws exist through which consolidation may be accomplished. A study of the presently classified "grazing" lands shows need for reclassification of some of these lands to "timber." A map of Montana has been made showing all classified State forest land. From

this map areas are being located around presently semiblocked holdings which would become proposed State forests in the eastern part of the state.

Problems

It will be necessary to determine the ownership of other lands within the present and proposed State forests in order to ascertain the degree to which consolidation can be accomplished in each individual unit. Landowners, both federal, state and private, must then be approached for cooperation. The problem of divided ownership in the present state forests in western Montana is recognized and the possibilities of exchanging scattered State forest sections for these lands is being explored.

Recommendations

Consolidation programs are generally complex, time consuming and at times exasperating. However, in view of the future benefits to the State of Montana, it is recommended that the program of consolidation of State forest lands be accomplished as swiftly as possible. The legislation is urged to provide funds for this purpose.

SAWTIMBER CUT FROM STATE FOREST LANDS
FISCAL YEAR 1957
(Board Feet)

County	Ponderosa Pine	Douglas Fir	Larch	Spruce	White Pine	White Fir	Lodgepole Pine	White Bark Pine	Cedar	Total Green	Total Dead
Lake	55,700	300,390	674,120	26,970	1,890	1,540	8,820		44,970	1,114,400	36,280
Flathead	17,620	426,691	670,289	4,032,070	6,780	271,670	81,940	75,490	2,390	5,584,940	478,390
Missoula	239,135	1,444,560	3,322,100	102,320		44,070	92,940			5,245,125	51,640
Lincoln	970,490	814,700	2,855,310	1,277,090		121,560	145,590	377,390		6,562,130	643,060
Granite	80,040	411,080					1,910			493,030	19,140
Powell	548,230	1,856,210	221,230	55,900		120	14,380			2,696,070	10,550
Ravalli	283,920	596,300	1,180			1,620	1,220			884,240	4,030
Sanders	584,860	270,300	208,175				31,690			1,095,025	81,730
Lewis and Clark	333,490	21,600								355,090	
Beaverhead		230,000								230,000	
Totals	3,113,485	6,371,831	7,952,404	5,494,350	8,670	440,580	378,490	452,880	47,360	24,260,050	1,324,820

SAWTIMBER CUT FROM STATE FOREST LANDS
FISCAL YEAR 1958
(Board Feet)

County	Ponderosa Pine	Douglas Fir	Larch	Spruce	White Pine	White Fir	Lodgepole Pine	White Bark Pine	Cedar	Total Green	Total Dead
Powell	98,790	572,520	119,960	18,870			9,120			819,260	5,100
Flathead*	7,992	747,240	2,033,090	5,182,550	78,540	322,910	314,790	453,220	100	9,142,812*	339,540
Lincoln	1,789,880	2,094,440	4,730,470	50,740	1,200	25,820	163,550	100	5,370	8,861,570	398,910
Ravalli	284,330	126,620								410,950	910
Granite	41,220	1,135,480		500		180	5,500			1,182,880	9,820
Missoula	39,130	1,392,820	4,940	700		15,670	8,490			1,461,750	24,860
Lake	54,430	133,010	319,230	49,550	11,060	4,000	19,120		187,910	777,310	63,320
Sanders	28,455	69,720	10,033							108,208	
Lewis and Clark	52,600		6,750							59,350	
Mineral	5,880	120								6,000	
Totals	2,402,707	6,271,970	7,224,473	5,302,910	90,800	368,580	520,570	453,320	193,380	22,831,090	842,460

*Includes 2,380 brd. ft. Birch

**CHRISTMAS TREES CUT BY COUNTIES
FISCAL YEAR 1957**

County	No. Permits	No. Bales	Unit Average Price	Stumpage
Lake	14	3,835	.60	\$ 2,311.46
Lincoln	13	10,028	.57	5,749.58
Flathead	44	23,967	.55	13,278.46
Sanders	29	5,571	.79	4,373.55
Missoula	11	3,432	.53	1,831.36
Mineral	2	.....	(forfeited)	175.00
Ravalli	5	1,376	.44	608.50
Powell	1	22	.44	9.77
	119	48,231		\$28,337.68

**CHRISTMAS TREES CUT BY COUNTIES
FISCAL YEAR 1958**

County	No. Permits	No. Bales	Unit Average Price	Stumpage
Lake	12	3,248	.50	\$ 1,615.50
Lincoln	28	6,142	.57	3,522.32
Flathead	64	24,824	.58	14,405.38
Sanders	15	5,219	.63	3,299.07
Missoula	23	4,654	.59	2,754.02
Mineral	2	353	.44	155.57
Ravalli	3	263	.47	123.93
Powell	1	216	.44	94.58
	148	44,919		\$25,970.37

DISTRIBUTION OF INCOME FROM STATE FOREST LANDS

Fiscal Year	Total	Montana State College	Montana State College Morris	Deaf and Blind	Industrial School	Normal School	School of Mines	University	Common School	E. Mont. Normal School
INCOME FUNDS*										
1957	\$ 13,387.85	\$ 183.00	\$ 1,713.64	\$ 733.44	\$ 97.61	\$ 247.58	\$ 1,487.73	\$ 253.50	\$ 8,423.78	\$ 247.57
1958	15,717.48	206.00	1,883.81	720.74	142.61	259.10	2,022.73	253.50	9,969.88	259.11
PERMANENT FUNDS*										
1957	332,938.85	1,352.89	2,191.14	1,499.05	361.37	1,205.65	13,752.25		312,576.50	
1958	278,252.71	1,252.56	24,526.90	1,304.35	4,064.48	18,742.04	4,842.52		223,519.86	
CAPITOL BUILDING FUNDS*										
1957	146,957.83									
1958	82,755.56									

*INCOME FUNDS: 90% allocated to schools and other state institutions; 10% of these funds credited to PERMANENT FUNDS.

*PERMANENT FUNDS: Interest only on these funds expendable.

*CAPITOL BUILDING FUNDS: 100% expendable upon deposit.

PRIVATE FOREST LAND PROGRAMS



Smoke from a \$10,000 Fire Rolls Over a Summer Home Area
In Pattee Canyon in Summer of 1958.

COOPERATIVE FOREST MANAGEMENT PROGRAM



A Cooperative Forest Management Forester (Service Forester) Discusses an Owner's Forest Problems with Him on the Ground.

Program

The recent **Timber Resources Review** and other studies show that forest management on government owned land and large private holdings is, in general, good, whereas, management on small holdings is, in general, poor. This is particularly alarming when considering the predicted increase in population of this country in the next decades and the unprecedented demands for wood products, water and recreation this increase in population will bring. It is further alarming when one realizes the correlation between the available natural resources and our standard of living as well as national defense. When we note that 73% of the nation's timber land is in private ownership, and 99% of this is in poor managed small holdings, the problem becomes acute. The awareness of this situation by the Congress brought about the Cooperative Forest Management Act of 1950 whereby the various states conducting a program to bring about better management on small holdings are reimbursed up to 50% of the cost of the program.

The program is administered by the State Foresters of the various states.

The Cooperative Forest Management Program in Montana is designed to furnish the small forest landowner and primary processors

of wood products technical assistance on all phases of forest management. The aim of the Cooperative Forest Management Program is to increase the productivity of small privately owned forest lands through an educational program. It is not the intent of the program to provide personnel to do the job for the landowners but rather to guide him as he does the work himself. The State Forester now employs a supervisor and three service foresters to provide the technical assistance.

In addition to the Cooperative Forest Management Program, the Office of State Forester administers two additional programs designed to help the small woodland owner.

The first of these programs is the Soil Bank Act. Under the Conservation Reserve portion of the Soil Bank Act, the landowner desiring to put all or part of his land into trees may qualify for financial assistance. The federal government will pay up to 80% of the cost of establishing the trees and pay the landowner annual rental per acre during the contract period. The



A Woodlot Owner Making a Fire Lane Through His Woodlot. Material Removed Will Be Used for Firewood.

State Forester is responsible for establishing planting plans and methods. The federal government, through the U. S. Forest Service, provides all the necessary funds for this purpose.

The second program is in cooperation with the Agricultural Conservation Program. Under this program, the State Forester furnishes technical assistance for two ACP Practices:

1. ACP A-7 Practice—Tree Plantings.
2. ACP B-10 Practice—Thinning and Pruning.

The federal government, through the ASC provides for payments to the landowner of up to 80% of the cost of these practices. This pro-

gram provides a definite incentive for the small woodland owner to adopt sound forestry measures. The Service Foresters provide on-the-ground advice and certification of these practices. The Office of State Forester is reimbursed for part of the cost of technical assistance through individual agreements with each county ASC Committee. One per cent of the county allocation may be used for reimbursement.

The State Forester further cooperates with the Federal agencies in the Small Watersheds, Soil and Water Conservation Needs Inventory and the Great Plains Forestry Program, and other similar programs.

Accomplishments

Statistical Fiscal Year—1957

Number of Service Foresters.....	4*
Woodland owners assisted.....	212
Acreage of Woodland Owner Assistance.....	38,111
Timber Inventoried for Management.....	None
Timber Marked for Cutting.....	266,000 board feet
Timber Stand Improvement (Thinning and Pruning)	513 acres
Land Planted	25 acres

Fiscal Year—1958

Number of Service Foresters.....	3
Number Woodland Owners Assisted.....	469
Woodland Owners Assisted (Acreage).....	34,106
Timber Inventoried for Management 5,200 Acres.....	5,747,000 board feet
Timber Marked for Cutting.....	1,064,000 board feet
Timber Stand Improvement (Thinning and Pruning)	1,038 acres
Land Planted	304
Shelterbelts Planted	7¼ miles

*Two inactive part of year because of lack of funds.

The forestry provisions of the Agricultural Conservation Program have also stimulated many requests for technical advise. By June 30, 1958, 251 ACP requests were processed by Service Foresters.

Memorandums of understanding between the State Forester, Soil Conservation Service, Soil Conservation Districts and Extension Service have been signed to effect maximum cooperation and eliminate duplication between all agencies concerned. Working agreements be-

tween the Service Forester and District Soil Conservation Service personnel have been established. A Field Manual of instructions has been prepared. Every effort is being made to provide sound practical forestry guidance.

Problems

There has been a constant increase in demands for assistance from small landowners since the start of the Cooperative Forest Management Program in Montana in 1956:

COOPERATIVE FOREST MANAGEMENT ASSISTANCE

Fiscal Year	Service Foresters	Requests Received	Requests Processed	Unable to Process	Cost Per Request
1957	3	274	212	62	\$51.00
1958	3	551	469	82	\$31.00

It is impossible for the three Service Foresters now employed to handle the increasing demands for assistance. By March of 1958 a backlog of 101 requests had accumulated.

Additional Service Foresters must be assigned to Montana before the anticipated and

current assistance can be properly administered. This step would reduce the travel time and expenses of personnel now employed and provide technical forestry assistance to forest landowners throughout the state.

COMMERCIAL FOREST LAND (Privately Owned)

	No. Of Owners	Area
Farm	4,930	2,360,000
Forest Industries	4	1,086,000
Other Private	9,602	1,411,000
TOTAL	14,536	4,857,000

(Small Woodland Ownership)

Size Class	No. Of Owners	Area
Under 100 Acres.....	7,374	295,000
100-500 Acres	5,471	840,000
500-5,000 Acres	1,671	1,625,000
TOTAL	14,516	2,760,000

(Large Industrial Ownership)

Over 5,000 Acres	20	2,097,000
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Recommendation

1. Make appropriations available with which to employ three additional Service Foresters—two west, and one east, of the Continental Divide.

FIRE PROTECTION ON PRIVATE FOREST LANDS

Program

The State Forester and the State Board of Forestry are charged, by law, with the responsibility of protecting Montana privately owned lands from fire. This protection is provided directly by the Office of State Forester and cooperatively with the recognized protection agencies to nearly 6 million private and state acres requiring protection. The recognized agencies are the fire protection associations—the Blackfoot Forest Protective Association, the Northern Montana Forestry Association, the

Anaconda Fire Protection Service, the U. S. Indian Service and the U. S. Forest Service. The associations are financed by assessment of classified forest lands, supplemented by Clarke-McNary funds and state appropriations apportioned by the State Forester.

The State Forester cooperates closely with the forest fire protection associations in formulating plans and budgets to provide sound protection at the lowest possible cost and in conducting an intensive forest fire prevention campaign—Smokey Bear and Keep Montana Green.



State Fire Crews are Trained on Practice Fires Before the Fire Season.

Accomplishments

During the past biennium a revised "Area and Cost Study" was completed to provide a more up to date picture of the fire protection problems related to state and private forest land in Montana, and to estimate the cost of providing adequate fire protection organization for these lands. This study shows that in order to provide even basic fire protection to Montana's state and privately owned forest lands expenditures now at \$330,000 per year must be raised to approximately \$747,000 per

year. Failure to provide adequate protection will undoubtedly result in costly, uncontrolled and wasteful forest losses in timber, watershed, game and recreation use. The 1958 fire season emphasized the need for more intensive protection. As an example, one fire on only 80 acres on state and privately owned land costs approximately \$10,000.00 to suppress. The Area and Cost study, available at the State Forester's Office, shows in detail the necessary equipment, manpower and improvements necessary to provide adequate protection.

The Office of State Forester has assisted the fire protection associations in the securing of some military surplus equipment which is being converted by the associations into fire control equipment.

Problems

The problems of protecting the private forest lands from fire centers around one phrase—adequate financing. The forest lands lying west of the Continental Divide have all been classified and are paying fire protection assessments. Even with assistance of approximately 2c per acre annually through the Clarke-McNary program which provides from federal funds assistance for fire protection on state and private forest lands, the associations continue to operate financially below their needs.

Lands east of the Continental Divide have not been classified for fire protection assessment which leaves the State Forester without finances to organize and adequately protect the privately owned forest lands in this area, although required to do so by law.

Montana forest landowners are required by law to furnish fire protection to their lands. If they do not do so for any reason, the State Forester and Board of Forestry must provide it for them and charge them on tax rolls for this service. Well over one million acres of land East of the Continental Divide is not currently

receiving protection. As required by law the State Forester must now take steps to provide this protection. In studying this problem weaknesses in the present laws when considered against the scope of this problem, has prompted the State Board of Forestry to thoroughly review present legislation and recommend amendments to the present law prior to actual establishment of protection in the area East of the Continental Divide. Forest protection, under the proposed amendment, would be considerably more efficient and economical to landowners in a long run.

Recommendations

The State Board of Forestry has prepared and approved for presentation to the Legislature a revision of the present fire protection law which would:

1. Define "forest land" for fire protection purposes.
2. Set up protection zones within which the forest fire protection costs are approximately the same.
3. Provide for classification of forest lands for protection and assessment purposes.
4. Provide for State participation in financing protection costs on private land. (See Battelle Memorial Institute Study.)

STATE LAND FOREST FIRE PROTECTION ORGANIZATION

NOW
HAS

STILL
NEEDS

5

LOOKOUTS



4

TO BE REPLACED

36

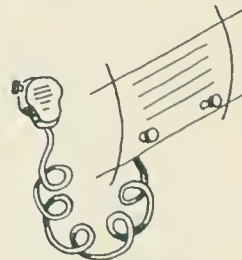


CARS, TRUCKS

6

26

MOBILE RADIOS



16

8



PORTABLE RADIOS

15

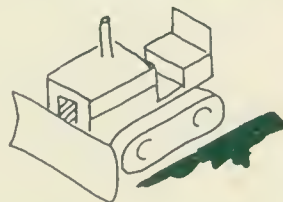
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PUMPERS



6

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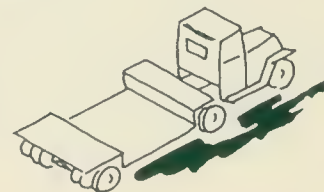


DOZERS

3

1

TRANSPORTS



3

1



RESIDENCES

3

2

SHOP-WAREHOUSES



1

**AREA PROTECTED, NUMBER OF FIRES, AND AREA BURNED—COMMERCIAL FOREST LANDS
OF MONTANA BY PROTECTION GROUPS**
Ten Year Period, 1948-1957

Year	Protection Group	Area Protected M Acres	No. of Fires	No. of Fires Per Million Acres	Area Burned Acres	Area Burned Per Million Acres	Percent Protected Area Burned
1948	State CM2	6,162	126	21	255	41	0.00
	Federal	17,858	163	9	3,851	216	0.02
	Total	24,020	289	12	4,106	171	0.02
1949	State CM2	6,162	453	75	21,649	3,513	0.35
	Federal	18,941	693	37	13,491	712	0.07
	Total	25,103	1,146	46	35,140	1,400	0.14
1950	State CM2	6,000	224	37	894	149	0.01
	Federal	19,033	201	11	256	14	0.00
	Total	25,033	425	17	1,150	46	0.00
1951	State CM2	6,000	238	39	549	92	0.01
	Federal	19,103	284	15	1,284	67	0.01
	Total	25,103	522	21	1,833	73	0.01
1952	State CM2	6,000	289	48	1,665	278	0.03
	Federal	19,129	392	21	3,342	175	0.02
	Total	25,129	681	27	5,007	199	0.02
1953	State CM2	6,000	347	58	796	133	0.01
	Federal	19,155	862	45	7,144	373	0.04
	Total	25,155	1,209	48	7,940	316	0.03
1954	State CM2	6,000	265	44	403	67	0.007
	Federal	21,098	385	18	1,227	58	0.006
	Total	27,098	650	24	1,630	60	0.006
1955	State CM2	6,000	240	40	346	57	.006
	Federal	21,189	346	16	5,746	274	.02
	Total	27,189	586	22	6,092	226	.02
1956	State CM2	6,000	268	45	1,103	184	.03
	Federal	21,214	619	29	6,523	308	.02
	Total	27,214	887	33	7,626	280	.03
1957	State CM2	6,915	321	46	1,381	200	.02
	Federal	21,040	524	25	2,726	130	.01
	Total	27,955	845	30	4,107	145	.01

*State CM2 includes state and private forest fire protection agencies.

HAZARD REDUCTION (Privately Owned Lands)

SLASH DISPOSAL

Program

Although opinions may vary as to the importance of treating slash (tops, limbs, and debris left on the ground following logging operations) to reduce fire hazards, forest fire history reveals that many of the nation's, and Montana's most serious and most costly forest fires have occurred in areas of untreated slash. The importance of an effective slash disposal program has grown with the constant increase in the value of Montana's forest products, watersheds and recreational opportunities.

The main principle of proper slash disposal is the breaking up of large accumulations of logging debris by piling, burning, scattering or isolation through construction of fire breaks. Methods vary according to terrain, slash volume, and monies available.

The current slash law authorizes the Office of State Forester to collect up to 75c per thou-

sand board feet of timber harvested from privately-owned lands. If the logging operator or landowner assumes slash responsibility, this money is refunded when the slash has been treated to the satisfaction of the State inspector. If the landowner or logger desires, or if the obligation has not been fulfilled within eighteen months, the money is used to finance disposal by State employed slash crews.

Accomplishments

District State Foresters and Slash Disposal Foremen have developed methods to secure the most effective slash reduction for the money and to enforce the provisions of the slash law.

Approximately \$180,000 is deposited annually with the Office of State Forester for hazard reduction work on private lands. This amount varies with the volume of timber cut.



A "Brush Cat" Piles Slash for Burning.

COLLECTIONS AND DISBURSALS OF FUNDS FOR THE DISPOSAL OF SLASH ON PRIVATE LANDS

	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
F. Y. 1957	\$145,598.86	\$183,755.79	\$329,354.65	\$174,277.10	\$155,077.55
F. Y. 1958	155,077.55	176,376.76	331,454.31	164,990.15	166,464.16

Due to several methods of hazard reduction, varying widths in fire breaks, cost per acre for fire break clean-up depending on type of logging, timber stands and topographic conditions,

the following accomplishments are determined by using the average cost of \$240.10 per mile of fire break constructed for the average width of 50 feet:

	Fiscal Year 1957	Fiscal Year 1958
1. Wages for State crews on privately owned forest lands, including dozer rental.....	\$104,593.36	\$ 92,426.36
Miles fire break construction based on average cost per mile.....	435.75	385.00
2. Number of and refunds to operators and landowners doing their own slash disposal.....	349—\$ 26,045.03	351—\$ 31,700.32
Miles fire break construction based on average cost per mile.....	108.50	132.00
TOTAL SLASH EXPENDITURES	\$130,638.39	\$124,126.68

Problems

The following table illustrates how rising costs have reduced the effectiveness of the present slash law since its inception in 1949:

SLASH DISPOSAL COSTS

Year	Slash Fee	Fore- man 8 Hours	3 Laborers 8 Hours	Total Wages 8 Hours
1949	\$0.75	\$12.00	\$33.60	\$45.60
1958	0.75	15.20	40.80	56.00
Increase ..	.0 %	26.6 %	21.4 %	25.4 %

While wages have increased over 25% in the last ten years, the slash disposal fee has remained the same. This fact, coupled with greatly increased costs of equipment and transportation, indicates the extreme necessity for revision of the slash disposal assessment.

Recommendations

The State Board of Forestry has approved the proposal of a new Fire Hazard Reduction and Management Law to be presented to the Legislature for passage: It will allow latitude

for administrative action by the State Forester with the approval of the State Board of Forestry.

Following is a brief of the important changes contained in the proposed law:

1. Provides for informing the State Forester where and when cutting is in progress.
2. Permits variable rate based on timber species, cutting methods, products harvested, access, topography, slope, and size of operation.
3. Initial purchaser of forest products must, before making purchase, determine that cutter has provided for fire hazard reduction or management.
4. Enable the State Forester to fulfill his obligations for fire hazard reduction or management on private lands.
5. Permits the Board of Forestry to set policy and approve major administrative procedures to be used by the State Forester.

6. Ensures compliance with law pertaining to hazard reduction in advance of cutting.
7. Lien for failure to comply with law directed against operator rather than landowner.
8. Raises ceiling on amount that can be collected from 75c to \$1.50 per thousand board feet cut. The rate would be based on variables listed under 2 above.
9. The person who conducts the cutting operation would be responsible for compliance. Landowner was not made responsible for following reasons:
 - a. Landowner may sell timber which may not be cut for a long period of time; in the meantime the land may change ownership.
 - b. The cutting operator will more normally be cognizant of the State laws as they apply to hazard management.
 - c. The cutting operator will deliver forest products to initial purchaser who under the law must determine that provisions have been made for hazard reduction or management.
 - d. Because of the large number of landowners involved and because of the preponderance of cases where the cutter is not the landowner, it would be an almost impossible task for the State Forester to ensure compliance if forced to deal directly with the landowner in every instance.

MONTANA RURAL FIRE FIGHTERS SERVICE

Program

The State fire control law of 1945 authorized the establishment of rural fire protection districts throughout Montana. The four main provisions of the law are:

1. Appointment of county and district fire chiefs.
2. Appropriation by county commissioners of not more than \$5,000 annually for the purchase and maintenance of fire control equipment.
3. Authority to establish closed burning seasons and issue burning permits at the discretion of the fire chief.
4. Organization of fire control districts through special taxes levied by petition signed by 50% of the taxpayers owning at least 50% of the taxable lands in the district.

Fire protection may also be financed through dues-paying associations or bond selling corporations.

With the enactment of this law, the Forest and Range Fire Fighters Service organized under Civil Defense during World War II was organized into the Montana Rural Fire Fighters Service, representing government and private

agencies concerned with rural fire problems. Planning, organization and coordination of rural fire protection is executed by a full time state coordinator elected by an executive committee of the Montana Rural Fire Fighters Service. The activities of the State Coordinator are financed by an appropriation for this purpose in the budget of the State Forester.

Accomplishments

Efforts to promote effective rural fire protection have been extended to 47 counties through visits of the Coordinator, news articles, meetings, and bulletins. Ninety-seven rural fire districts and associations are in operation; thirty-six additional rural fire districts are being assisted in their organization by the MRFFS Coordinator. The State Coordinator attends and participates in the following state-wide meetings: 4-H Congress Fire Control School, Montana Rural Fire Fighters Service Annual Meeting, State Farm Safety Committee, Montana Fire Chiefs Association Annual Meeting, Montana Volunteer Firemens' Association Annual Meeting, State Rural Civil Defense Committee Meetings.

An outline explaining steps in organizing rural fire protection districts was prepared and distributed to approximately 300 people interested in, or contemplating, the formation of

rural fire district. An estimated two hundred meetings and demonstrations are held by the Coordinator in rural areas throughout the state each year in the interest of rural fire protection.

Problems

The 1956 fire season (F. Y. 1957) was extremely serious. Reports show that 533 rural fires which took four lives and caused \$1,278,185 damage, occurred. The 1957 (F. Y. 1958) reports show a less destructive season.

The record of man-caused fires in rural Montana testifies to the necessity for a vigorous program of rural fire protection and education. While ninety-one fire districts and six associations equipped with fire trucks are presently in operation, at least 100 additional protection districts should be organized.

Recommendations

The fact that over a million dollars in loss is suffered annually from rural fires in Montana indicates that the educational program of rural fire protection organization is one that needs intensification.

**FIRES REPORTED BY MONTANA RURAL
FIRE FIGHTERS SERVICE**

CAUSE	1956	1957*
1. Lightning	148	18
2. Burning grass, trash, brush, etc.	125	11
3. Cigarettes and campfires.....	22	7
4. Defective wiring	17	5
5. Railroads	16	6
6. Chimneys	13	0
7. Children with matches and firecrackers	12	25
8. Motorized equipment	11	2
9. Gas and gasoline explosions..	7	0
10. Spontaneous combustion	4	0
11. Smoking in bed.....	3	0
12. Wood and coal stoves.....	2	0
13. Miscellaneous	20	14
14. Undetermined	123	31
Total Fires	533	119

*Due to events beyond control, 1957 data shown here is recognized as being incomplete.

MONTANA RURAL FIRE FIGHTERS SERVICE BUDGET

Fiscal Year	State Funds	CM-2* Funds	Total Funds	Coordinator Salary	Clerical Salaries	Travel and Operations
1957	\$2,500.00	\$ 500.00	\$3,000.00	\$2,400.00	\$ 350.00	\$ 600.00
1958	7,513.00	.....	7,513.00	4,800.00	50.00**	2,663.00

*Includes Fish and Wildlife Service contribution.
**Up to \$350.00 in services contributed by the Agricultural Extension Service.

FOREST PEST CONTROL

Program

During the recent years damage of major proportions to Montana's forests has been caused by three forests pests—dwarf mistletoe, spruce bark beetle, and spruce budworm.

Mistletoe damage is severe in many areas—noteably in the vicinity of Flathead Lake. Despite research by several interested agencies in Montana, no satisfactory control has yet been developed.

The spruce bark beetle epidemic has been responsible for killing over a billion board feet of timber in Montana. The only economical method of control is to harvest the timber while

the larvae of the beetle are under the bark. The cooperative efforts of industry, state and federal agencies in a gigantic program to harvest infested spruce timber has decreased the severity of the spruce bark beetle infestation.

The spruce budworm continues to be epidemic. To date approximately three million acres of timber is affected by the budworm, of which it is estimated 40% is in private ownership.

The federal government finances all the cost of spraying federally owned lands and pays half the costs of spraying state and privately owned lands. Spraying costs have varied from

ninety cents to one dollar ten cents per acre. The state legislature in each of the past three sessions has appropriated funds necessary for spraying the state owned lands. Private owners pay on a voluntary basis.

Accomplishments

The U. S. Forest Service performs the actual spraying operations. The State Forester is responsible for securing agreements for payment from the owners of the private land. It is necessary that all infected areas within a spray unit be sprayed to prevent reinfestation.

Problems

Montana's primary problem in connection with the control of forest pests is the adequate and equitable financing of the project private forest lands, much of which are intermingled with state and federal ownership. Under present statutes individual landowners within the proposed spray unit may voluntarily pay his share. Some owners willingly cooperate. Others

refuse for a variety of reasons among which are financial inability, or the low or non-existent commercial value of his timber stand.

Recommendations

The State Board of Forestry has prepared and approved an amendment to the present forest pest control law to be presented to the 1959 legislature. This proposed amendment:

1. Declares forest pests to be public nuisances.
2. Defines, for forest pest control purposes: owner, control, infestation, forest pests, forest land, timber.
3. Places responsibility for control of forest pests on owners of forest land. If owner fails, State can take action.
4. Provides a means for collecting owners' share of control costs.
5. Provides for State participation in payment of control costs on private lands.

PRIVATE FOREST LAND INVENTORY

Program

The State Board of Equalization, confronted with the task of providing leadership and methods to be used by counties for reclassifying all private lands in Montana for tax purposes, has requested the Office of State Forester to undertake a forest inventory of private timberlands, county by county, in the state.

The amount of work involved in this project may be visualized by studying the United States Forest Service publication, **Timber Resource Review**, which shows:

CLASSIFICATION OF MONTANA COMMERCIAL FOREST LAND BY OWNERSHIP

Ownership	Acreage	Number of Owners
Federal	10,187,000	
State	608,000	
County and Municipal	75,000	
Total Non-Private	10,870,000	.....
Farm	2,360,000	4,930
Wood Using Industries	1,086,000	4
Other Private	1,411,000	9,602
Total Private	4,857,000	14,532
Total All Owners	15,727,000	....

This study indicates that nearly 31% of Montana's timberlands is privately owned and subject to the proposed inventory. While it is common knowledge that Montana west of the Continental Divide is heavily forested, there are only four counties in the entire state which have less than one million board feet of timber. This means that every county must be inventoried if a uniform method of timberland appraisal is to be developed.

Accomplishments

Two inventory plans have been prepared and presented to the State Board of Equalization:

Method I

The technique use in this method would involve a ground cruise of every tract of private forest land with sufficient timber to warrant inventory. While this method would give the most reliable information, it was rejected by the Board because time and costs were excessive.

Method II

This method is fashioned after **A Proposed Method For Timber Area Volume Determination and Valuation For Tax Assessment Purposes in Montana** as devised by the Timber

Management Division of Region one, U. S. Forest Service. This inventory plan, based on the principle of land stratification, was adopted by the State Board of Equalization.

A large forest tract, undivided, varies so much in composition that no data may be applied to a small compartment of that forest even though the data is the average of the whole. When the forest is delineated into many strata, the average of the strata develops significance for an individual tract of land. With this system, it is possible to have 56 separate types of forest land in eastern Montana and 72 different types in western Montana. Each has average properties which may be appraised in monetary value for a county or group of counties. The State Board of Equalization will determine the dollar value of each forest type.

The Office of State Forester, if requested, will provide each county, at cost, the area of each forest type in every tract of privately owned timber land. The use of aerial photographs supplemented by ground checks will make it possible to classify the tracts as to accessibility and topography.

The basic premise of this method of inventory is economy through the use of technical work already accomplished by other agencies. It is estimated that inventory costs for most counties will not exceed twelve to fifteen cents per acre. An inventory manual containing complete instructions for field and office personnel has been prepared assuring uniform administration throughout the State. The Manual has been

accepted by the State Board of Equalization. Each county must carry out the provisions of the Manual either independently or through the services of the State Forester, with provisions for reimbursement. It is anticipated that the field work will begin in the fall of 1958. While winter snows may curtain certain phases of this inventory, much of the project can be accomplished year round.

Due to the scattered nature of State owned lands, many forest sections lie throughout the State in the various counties. The State Forester anticipates, while working on inventories for the county, to obtain similar information on the State owned forest lands. The State will be expected to pay its proportionate share of such costs involved, however, it will speed up the completion date of the inventory of State owned lands.

Problems

The scope and time limits imposed on this project necessitates the assignment of additional personnel to the Office of State Forester during the duration of the inventory. It is too early to see yet, but it appears it might be difficult to obtain men qualified and trained to perform the necessary photoanalysis, map and field work. Wherever practical the State Forester plans to employ local people.

Recommendations

It is recommended that the State Legislature appropriate sufficient monies for the State's proportionate share of the forest inventory to obtain information on intermingled State owned forest lands.

STATE FORESTER'S COOPERATIVE WORK FUNDS

All monies received from public and private agencies and individuals cooperating with the State Forester and the State Board of Forestry are deposited to the credit of these special work

funds in compliance with Section 81-1410 R. C. M., 1947 (1830-L) (L. 1925) and are used for purposes set forth in Section 28-123 R. C. M., 1947 (Sec. 23, Ch. 128, L. 1939).

Protection Assessments Funds—155

Fiscal Year	Forward	Receipts	Total Available	Expended	Balance Forward
1957	\$	\$ 48,491.76	\$ 48,491.76	\$ 46,224.15	\$ 2,267.61
1958	2,267.61	47,087.97	49,357.40	46,535.10	2,822.30

Clarke-McNary Fund—104-19

1957	\$ 4,289.52	\$ 89,962.98	\$ 94,265.30	\$ 93,169.10	\$ 1,226.46
1958	1,226.46	91,991.65	93,218.11	87,528.69	5,689.42

Cooperative Forest Management—104-41

1957	\$ 1,005.57	\$ 12,594.18	\$ 13,599.75	\$ 7,731.18	\$ 5,868.57
1958	5,868.57	17,640.19	23,508.76	12,389.94	11,118.82

Soil Bank—104-62

1957	\$	\$ 28,635.00	\$ 28,635.00	\$ 27,537.25	\$ 1,096.75
1958	1,096.75	20,018.90	21,115.65	20,159.81	955.84

Timber Stand Improvement—100

1957	\$ 9,815.28	\$ 13,825.25	\$ 23,640.53	\$ 6,582.05	\$ 17,058.48
1958	17,058.48	18,384.88	35,443.36	5,174.23	30,269.13

Brush Disposal—156

1957	\$ 51,537.79	\$ 44,620.83	\$ 96,158.62	\$ 74,442.37	\$ 21,716.25
1958	21,716.25	44,667.86	66,384.11	41,823.95	24,560.16

Slash Disposal—156

1957	\$145,598.86	\$183,755.79	\$329,354.65	\$174,277.10	\$155,077.54
1958	155,077.54	176,376.76	331,454.31	164,990.15	166,464.16

State's General Fund—101*

1957	\$	\$ 93.00	1958	1,971.45
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*To State's General Fund when deposited.

RELATED PROGRAMS



Smokey Bear Takes His Place in a Parade.

INFORMATION AND EDUCATION

Program

Since the effectiveness of the forestry program depends to a great extent on public support, efforts have been made to increase public awareness of the activities of the State Forestry Department, the value of the state timber resource and the menace of forest fires. While all employees of the State Forestry Department contribute to promoting favorable public opinion and understanding, responsibility for information and education activities is delegated to the Fire Prevention Forester.

Accomplishments

One of the major projects of the information and education program is the administration of the Cooperative Forest Fire Prevention Campaign, popularly known as the Smokey Bear Program. This campaign is supervised by the Association of State Foresters and the U. S. Forest Service through an executive committee of three state foresters, three representatives of the U. S. Forest Service and a member of the National Advertising Council. The U. S. Forest Service provides a director who coordinates the program on a national level. The Advertising Agency of Foote, Cone and Belding (Los Angeles) contribute art and ideas for slogans to the program free of charge as a public service. The campaign is financed by federal and state agencies, the royalties from the sale of Smokey Bear items and contributions of time and space by newspapers, magazines, radio and television.

The Montana headquarters of Smokey Bear is operated by the State Forestry Department. The Fire Prevention Forester answers thousands of requests for membership in Smokey's Junior Rangers and arranges personal appearances of Smokey at schools, parades, fairs and clubs. Smokey Bear posters, booklets, films and recordings are distributed to schools, and radio and television stations, magazines and newspapers.

The State Forestry Department cooperates with the forest industries and the Montana Junior Chamber of Commerce in the Keep Montana Green Fire Prevention Program. Car license tags, stickers, pamphlets and other media of fire prevention are distributed throughout the State.

Fire Protection Agencies assist the Junior Chamber of Commerce putting fire prevention messages on the highways. State Forestry employees aided the Boy Scouts of America on their annual camp held on the Swan River State Forest. Information to hunters, campers, fishermen and others regarding campsites, fishing holes, water supplies, etc., is available at the District Headquarters of the District State Forester.

County fairs have presented the State Forestry Department with an effective means of informing the public. Exhibits depicting an important phase of forestry or a vital conservation message are prepared and presented at various fairs. State Forestry Department personnel are in attendance to distribute prepared material and answer questions.

State Forestry Department personnel contribute to local, state and regional publications regarding forestry activities. Speeches, conservation movies and slides, and discussions and lectures are continuing parts of the program. Through the cooperation of the Superintendent of Public Instruction and the Montana Forestry School, the State Forestry Department prepared a state-wide Arbor Day program in 1958. A proposed program for classroom or school use was prepared by the State Forestry Department and sent to all schools in Montana. Seedling trees were made available (at no cost) for planting by school children requesting them of the Montana Forestry School Nursery through the State Forester.

Problems

The fire prevention program and information-education program of the State Forestry Department is showing steady progress. Operations are limited by available funds and equipment. Requests for information or assistance have tripled in the last biennium.

Recommendations

Maintain efforts to inform the public of the services and program of the State Forestry Department and intensify the campaign to reduce man-caused forest fires, particularly those caused by campers.

SAFETY PROGRAM

Program

Many jobs in the State Forestry Department are of a high hazard nature. Although many seasonal employees return each year to the department, a large number are new and unfamiliar with forestry work and safety measures. The purpose of the safety program is to reduce the number of careless accidents, both to employees and equipment.

Accomplishments

First aid kits have been made a regular item of equipment in all vehicles, offices, shops and with all crews. Employees are required to wear safety hats in the woods and in areas not free from falling objects. (Note pictures.)

Safety training was stressed at all training schools, with foremen given special instructions to hold daily safety talks and inspections. Training aids such as safety manuals, films and posters were used. Membership in the National Safety Council has proved helpful.

All vehicles have been equipped with reflectors, fire extinguishers and first aid kits, and a systematic check on vehicles for safety factors is a continuous program. Employees driving a state vehicle are required to have a chauffeur's drivers license. Two ambulances were obtained

through military surplus and with some slight modification will be placed at the Stillwater and Swan Lake State Forest. These ambulances have been equipped with stretchers and large first aid kits. Safety shields have been purchased for shop work. New (dry chemical) fire extinguishers and CO₂ extinguishers are gradually replacing the toxic extinguishers.

Accidents requiring medical attention showed a distinct drop in 1958 (16) after special emphasis was placed on safety as compared to 28 in 1957.

Problems

Forestry work will probably always be hazardous. Special attention by District State Foresters and foremen particularly must be given this problem. The purchase of additional safety equipment will tend to prevent accidents.

Recommendations

It is recommended that a continued stress be placed on personnel and equipment accidents prevention. The present policy of not hiring employees under 18 years of age or those in advanced years should be maintained. Additional equipment for preventative measures should be obtained.

CIVIL DEFENSE FIRE PLANNING

Program

Following the passage of Montana's Civil Defense Act of 1951, the State Forester became the chairman of Montana's Civil Defense Fire Protection program. In 1956 the jurisdiction of the committee was expanded to include rural lands in addition to woodlands. The committee comprised of representatives from all state and federal agencies having fire responsibilities on rural and wild lands became the Montana Rural Fire Defense Committee. The Federal agencies—the U. S. Forest Service, the Bureau of Land Management and the National Park Service—are delegated authority to assist in civil defense planning by the Federal Civil Defense Administration.

Accomplishments

The Montana Rural Fire Defense Committee has completed the inventory stage of rural fire defense planning and has issued the Montana

Rural Fire Defense Plan. It is hoped that this plan can be kept current through annual revision.

Early in 1958 the State Forester was made Chief of the Defense Fire Service. The Rural Fire Defense Plan became a part of the Montana Survival Project civil defense plan.

Problems

Plans for Urban Fire Defense under the Montana Survival Project are yet to be completed. Planning of this kind and the revision of plans requires considerable time and assistance.

Recommendations

For the development of a satisfactory Civil Defense Rural Fire Plan and maintaining both the Civil Defense Rural Fire Plan to acceptable standards, the services of a full-time clerk-stenographer and operating expenses should be provided for the next biennium.

BATTELLE MEMORIAL INSTITUTE

STUDY OF THE COOPERATIVE FOREST-FIRE CONTROL PROBLEM

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Since the inception of the state and federal cooperative fire-control programs for forested and watershed lands, much progress has been made on forest fire control. Acreages under protection have increased over the year, acreages burned have been reduced, and the public awareness of the dangers of fires has been increased.

An expanded cooperative program for fire control on state and private forested and watershed lands in the United States was provided in Section Two of the Clarke-McNary Act of 1924. This section of the Act provided for federal cooperation in a form of technical and financial assistance to help state and private interests improve the level of fire control on their forests and watershed lands.

A study of the Cooperative Forest Fire Control problem made by an independent contractor, the Battelle Memorial Institute, under a federal contract with the U. S. Forest Service, was recently completed. The initial proposal of this study was aimed to answer these questions:

1. What should be the total cost for adequate protection against fire for non-federal forested and watershed areas.
2. What are the criteria for sharing the costs of protection and the degree of federal, state and private sharing.

Nine advisors throughout the nation were approved as collaborators to guide the study. They are:

John L. Aram, Vice President, Weyerhaeuser Timber Company.

Stanley G. Fontanna, School of Natural Resources, University of Michigan.

L. J. Freedman, Vice President (retired), Penobscot Chemical Fibre Company.

Guy C. Jackson, President, National Reclamation Association. (Mr. Jackson has since been relieved at his own request.)

J. E. McCaffrey, Vice President, International Paper Company.

Walter F. McCulloch, Dean of the School of Forestry, Oregon State College.

C. G. McLaren, Vice President and General Manager, National Container Corporation (recently acquired by Owens-Illinois Glass Company.)

E. F. Swift, Executive Secretary, National Wildlife Federation.

Charles L. Wheeler, Vice President, Pope and Talbot, Inc.

The Battelle Memorial Institute selected four foresters as consultants. They are:

E. L. Demmon, Director (Retired), U. S. Forest Service, Southeastern Forest Experiment Station.

G. L. Drake, Vice President (Retired), Simpson Logging Company.

A. S. Hopkins, Executive Secretary of the Northeastern Forest Fire Protection Commission.

J. H. Price, Regional Forester (Retired), U. S. Forest Service.

Exerpts from the study, of interest to Montanas, show the following:

"All indications point to an increasing fire potential . . ."

"There is an apparent trend upward in the use of private forest and watershed lands for recreation . . ."

"In many parts of the country the fire hazards are increasing—particularly in the Northwest and South. In the Northwest there are areas where slash (the boughs and limbs left in the woods after lumbering) is building up the hazard . . ."

"State and private forest and watershed lands represent a multiple-use resource. Forest products such as timber are harvested; many industries and communities depend on water supplies from protected watersheds; . . ."

"To estimate justifiable cost of fire control, therefore, it is necessary to have reasonable estimates of the economic losses associated with

timber, water, recreation, and other uses of forest and watershed lands."

" . . . It appears that future demands for wood will strain future supplies and that every practical means available must be employed to boost future supplies. Reducing growth loss resulting from fire is one possible way."

" . . . The value of timber in terms of constant dollars has been increasing on the average at the rate of nearly 3 per cent per year for the past 50 years. An estimated future tight supply of wood is likely to result in a continuation of this trend . . ."

"These consequences of fire on watersheds are critical in some parts of the country and of varying importance in other parts of the country . . ."

"The importance of outdoor recreation cannot be denied, nor can the increasing trend toward more use of forest and watershed lands for recreation be ignored. Tourism and recreation is an important industry in some parts of the country, and this "industry" in some measure is dependent on fire control . . ."

"The people of the country ultimately pay the costs of fire control regardless of the channels through which funds pass. The question, then, involves the determination of the most equitable flow of funds consistent with the present socioeconomic and political patterns . . ."

"The responsibility for fire-control costs should be borne in proportion by those who are responsible for fire risks . . ."

"The sharing ratios resulting from this analysis are: State and private, 41 to 60 per cent and federal, 59 to 40 percent."

The conclusions and recommendations of this study were:

1. The cooperative forest-fire control program conducted under Section 2 of the Clarke-McNary Act has resulted in substantial progress in forest-fire control on state and privately owned lands.

2. Reduction in fire losses to timber resources alone justifies an expenditure of about \$60 million annually for a cooperative program.
3. The basis for a cooperative forest-fire control program cannot be restricted to timber resources alone, but must include associated resources, such as water and recreation, which are becoming of increasing importance to the national economy.
4. While on much of the C-M2 area a level of protection justified on the basis of forest growth alone will give an adequate level of protection for these associated resources, on other C-M 2 lands additional expenditures for protection are justified on the basis of watershed and recreation.
5. The criteria for determining an equitable sharing of fire-control costs among private, state and federal should be: (1) fire risk, and (2) loss reduction.
6. On the basis of these two criteria, the sharing of aggregate fire control costs on a nationwide basis should be in the range of: state and private, 41 to 60 per cent, and federal, 59 to 40 per cent. These percentages are not necessarily applicable to any region or state. The pattern of fire risks and relative importance of various kinds of fire loss vary considerably from one part of the country to another.

State Forester's Recommendations

In view of the studies made to associate these recommendations with Montana's problem, it appears that the recommendations in the proposed legislation recommended by the State Forester and the Board of Forestry to amend the present fire control law is sound and justifiable. This law proposes cost-sharing factors which fall within the recommendations of the Battelle Memorial Institute.

Remember - only you can Prevent Forest Fires

